SIEMENS

Siemens Remote Services

[redacted] CO

Hardware Installation Guide

RDIAG Router 801 ISDN

Partnumber 73 82 869

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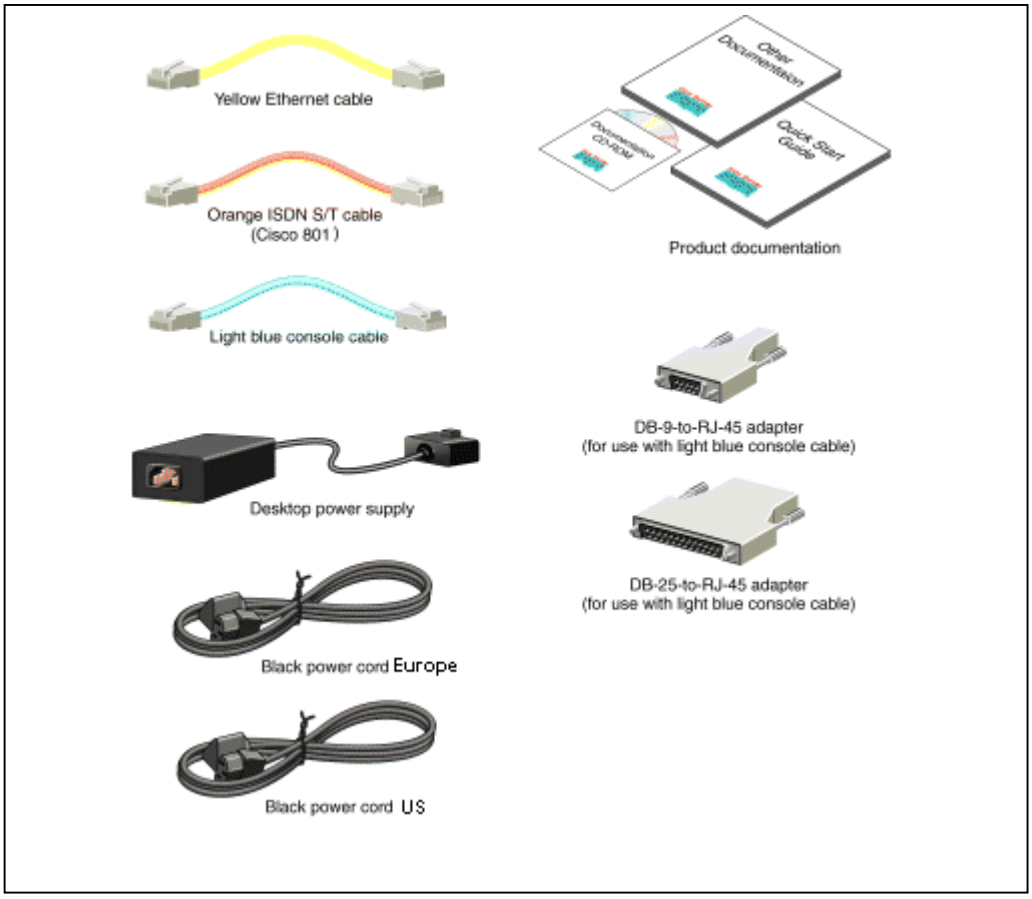
1. Unpack the Box



2. Before Installation

Cisco 800 series routers are shipped to you ready for desktop mounting. Before connecting the router to the network and power supply, simply set the router on a desktop, shelf, or other flat surface. The router you got is preconfigured by SIEMENS Medical Solutions. The router package includes power cords for the US and Europe. You need to provide a power cord for other countries. Pay attention to the Maximum Cable Lengths (see Appendix C).

ISDN BRI Line Configuration Requirements
Before using a Cisco 801 router with an ISDN BRI you must order a correctly configured ISDN BRI line from your local telecommunications service provider.
This process varies significantly from provider to provider on a national and international basis. However, following are some general guidelines:

- Ask for two channels to be called by one number.
- Ask for delivery of calling line identification. This is also known as *Caller ID* or *Automatic Number Identification* (ANI).
- Ask for a point-to-multipoint service **data** line (subaddressing is required).
- Ask for a Network Terminator (NT). You need a ISDN BRI **S/T** line.

ISDN on an internal PABX (Private Automatic Branch eXchange) is not recommended. Also refer to the SRS Planning Guide.
If you are familiar with the hardware installation and the configuration connection to your PC go to chapter 8.

For the configuration of the router you will have to know what the following paramters of your ISDN connection are:

- The **ISDN switch type** and in some cases
- The **spid numbers**

Your ISDN service provider will be able to tell you what these parameters are.

The following figure shows the router ports. These ports and the cables are color-coded to help you connect the cables correctly. The figures in the following chapter may differ in some details from your router.

Cisco 801

3. Connecting Power and Turning the Router On

You can verify your installation by checking the appropriate LEDs during the installation process if you switch the router on before making any network connections.

Follow these steps to connect the router to power and turn it on:

Step 1 Make sure the router power is off. Press the power switch to standby
Step 2 Connect the power supply cable to the 8-pin connector on the rear panel of router
Step 3 Connect the female end of the power cable to the desktop power supply
Step 4 Connect the male end of the power cable to an electrical outlet
Step 5 In order to switch the router on, set the power switch (I/0) to I.
Step 6 Check the following LEDs:

- The OK LED (front panel)---On if power is being supplied to router.

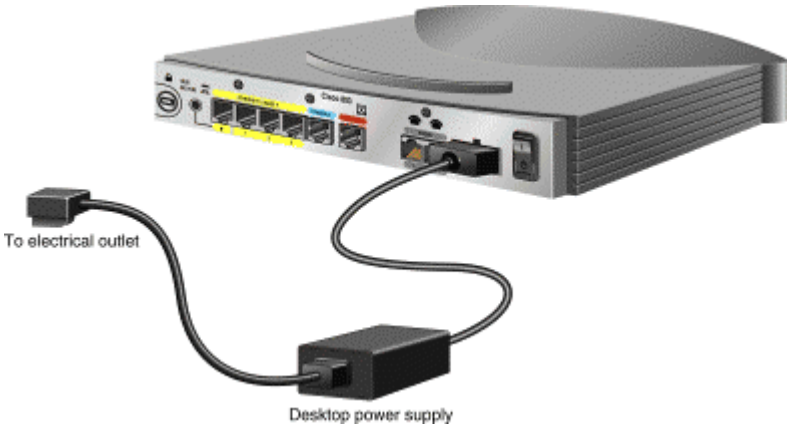


Figure 1

4. Connecting the Router to the LAN

The yellow straight-through RJ-45-to-RJ-45 cable (contained in the package) is necessary for this connection. Follow these steps to connect the router to a 10BaseT Ethernet LAN (Figure 2):

Step 1 Connect one end of the yellow cable to the yellow Ethernet port (10BASE T) on your Cisco 801.

Step 2 Connect the other end of the cable to one of the ports on the 10BaseT hub, switch or network walljack. If you want to connect the router directly to a PC, Server or Workstation you will need the router HUB/NO HUB Button setting OUT (the default setting is IN).

Step 3 Check the following LEDs:

- The LINK LED (rear panel, next to 10BaseT port) --- On, if the connection is working properly
- If the LINK LED is not on, press the HUB/NO HUB button

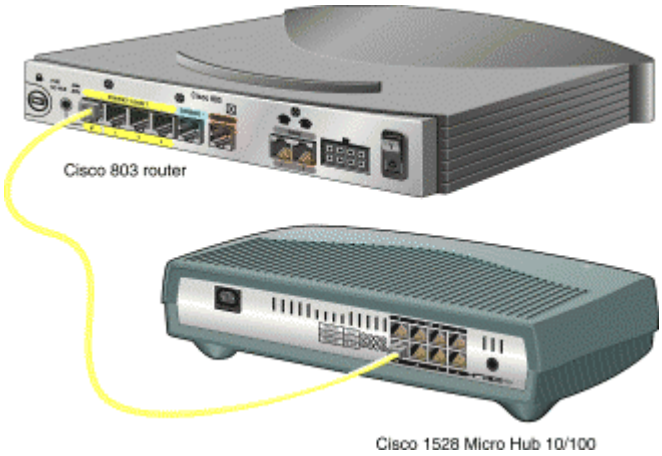


Figure 2

5. Connecting the Cisco 801 to the WAN / ISDN

The ISDN Service Provider must provide a Network Termination 1 (NT1) device. You need a ISDN BRI S/T line from your Service Provider. The orange straight-through RJ-45-to-RJ-45 cable (contained in the package) is necessary for this connection.

Depending on where the Cisco 801 is used, the ISDN BRI connection can be different. Follow these steps to connect the Cisco 801 to the WAN:

Step 1 Use the orange RJ-45-to-RJ-45 cable and connect one end of the cable to the ISDN S/T port of the router.

Step 2 Connect the other end of the cable to the NT1 (Figure 3). *Do not connect ISDN equipment other than the preconfigured router to the same ISDN line (S_0 Bus).*

Step 3 Check the following LEDs:

- LINE is on
- CH1 or CH2 is on only while the router has a data connection

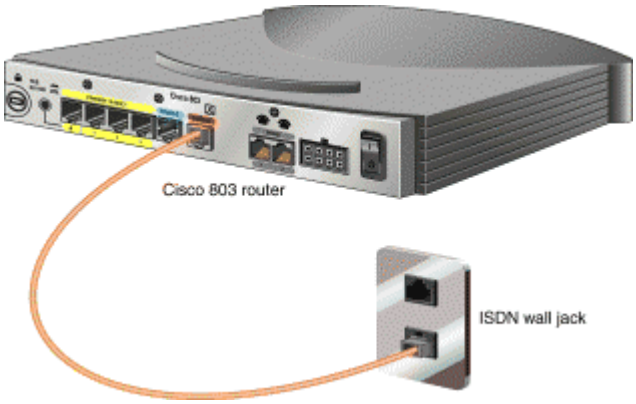


Figure 3

6. Connecting the Console Port

The cable and adapters required for this connection are included with the router. Follow these steps to connect the router to a terminal or PC:

Step 1 Connect one end of the light-blue console cable to the light-blue CONSOLE port on the router (Figure 4).

Step 2 Use the correct adapter to connect the other end of the cable to your terminal or PC (serial interface).

Note If your terminal or PC has a console port that does not match any of the adapters, you must provide the correct adapter for that port.

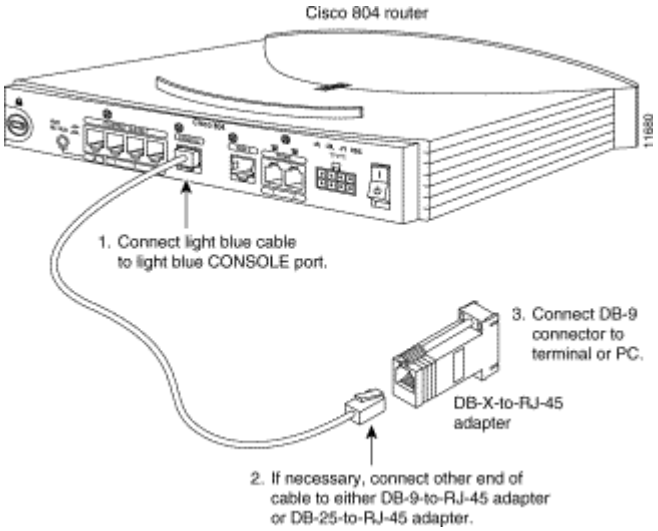

Cisco 804 router
11880
1. Connect light blue cable to light blue CONSOLE port.
3. Connect DB-9 connector to terminal or PC.
DB-X-to-RJ-45 adapter
2. If necessary, connect other end of cable to either DB-9-to-RJ-45 adapter or DB-25-to-RJ-45 adapter.

Figure 4

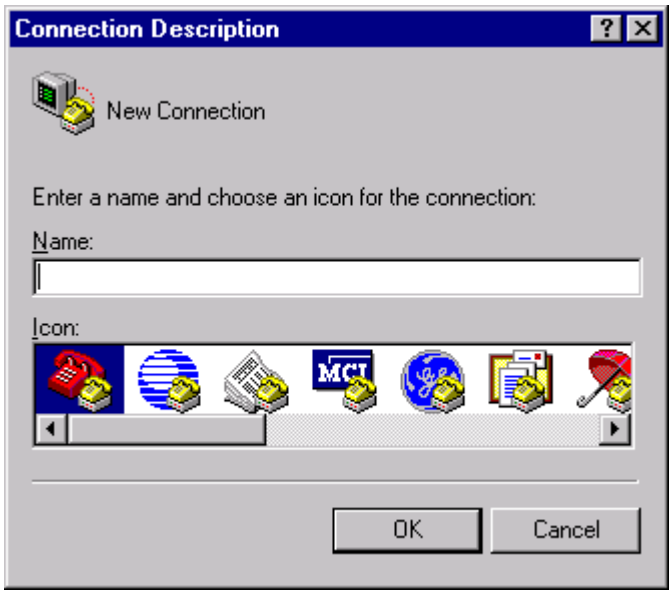
7. Configure PC (e.g. Hyperterminal) for communication

Once your router is correctly connected to your PC, you can start building your configuration. The Windows Hyperterminal emulation is the interface to your Cisco 801 router.

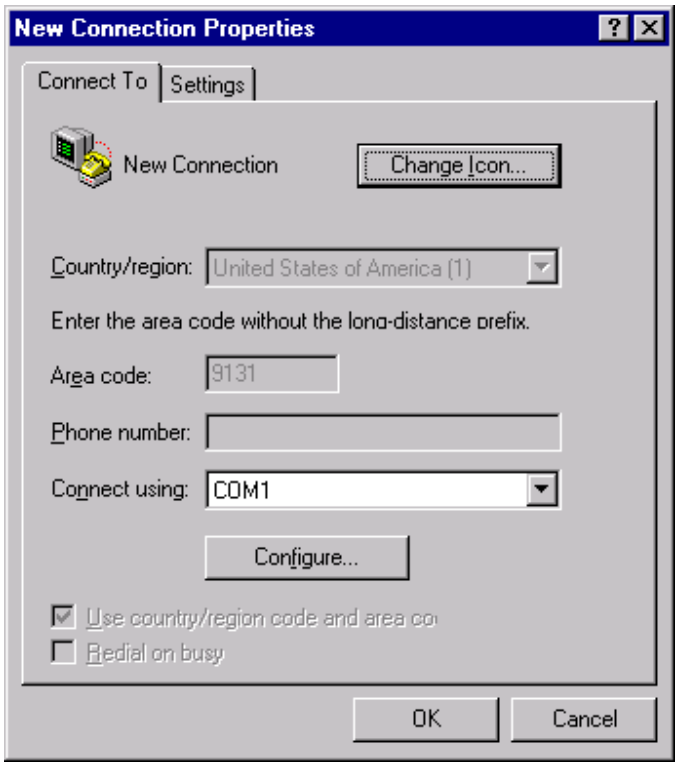
Step 1 Start Hyperterminal from the „Programs – Accessories – Hyperterminal“ menu in the start panel.

Step 2 In the „Connection Description“ dialogue box

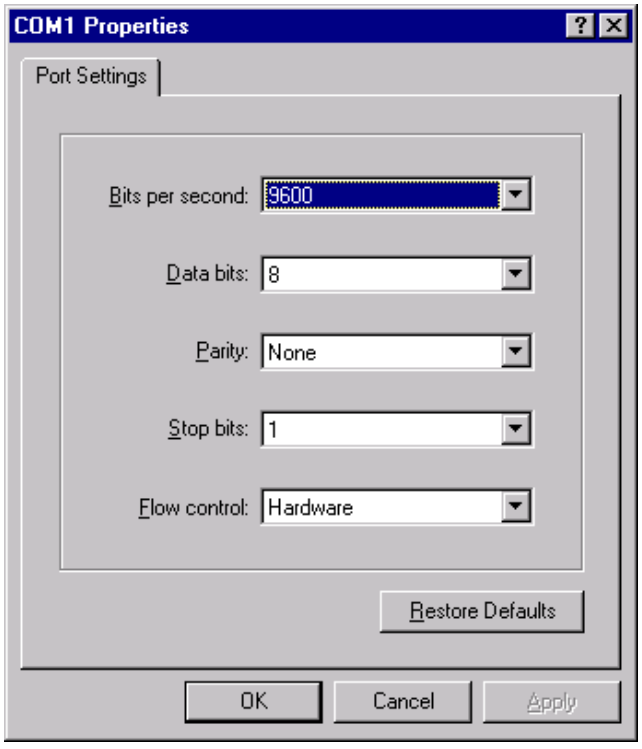
- enter a name for the connection and choose an icon and if you want to save the connection settings click „OK“
- *or* click „Cancel“



Step 3 Choose „Properties“ from the „File“ menu. On the „Connect to“ tab, check, if the port (e. g. COM1) to which your router is connected is selected.



Step 4 Click „Configure“ and make sure that the settings have the following values: Bits per second: 9600, Data bits: 8, Stop bits: 1, Flow control: Hardware. Click „OK“ twice to leave configuration mode.



Step 5 Choose „Connect“ from the „Call“ menu to establish a connection to the router.

8. Configuring Global Parameters

The preconfigured router uses the ISDN switch type EURO-ISDN (basic-net3) for Europe. The following steps are necessary *only* if you use another ISDN switch type. Ask your ISDN service provider.

Use this table to configure the router for some global parameters, including the ISDN switch type that the router is connected to through the ISDN line. The switch type also needs to be set for the specific interface, e.g. the bri0. The router's name (in front of the prompt), should be a combination of serial number and part number (e.g. jac0356323Qc869).

	Description	Prompt	Command
Step 1	Enter enable mode	JAC0356323Qc869>	**enable** Password: **presec**
Step 2	Enter configuration mode.	JAC0356323Qc869#	**configure terminal**
Step 3	Configure the type of central office switch being used on the ISDN interface. Use the keyword that matches the ISDN switch type that you are using. The PRECONFIGURED router is configured for **basic-net3.** Ask your isdn service provider	JAC0356323Qc869(config)#	**isdn switch-type** <switch type code> – *[refer to* Appendix B *]*
Step 4	Enter interface BRI mode	JAC0356323Qc869 (config)#	**interface bri 0**
Step 5	Configure the type of central office switch being used on the bri 0 interface. Use the keyword that matches the ISDN switch type that you are using.	JAC0356323Qc869 (config-if)#	**isdn switch-type** <switch type code> – *[refer to* Appendix B *]*
Step 6	Configure SPID only for switch **basic-5ess, basic-dms100, basic-ni1.** Ask your isdn service provider.	JAC0356323Qc869 (config-if)#	**isdn spid1** <spid-number> **isdn spid2** <spid-number> *[refer to* Appendix A*]*
Step 7	Go back to config mode	JAC0356323Qc869 (config-if)#	**exit**
Step 8	Go back to enable mode	JAC0356323Qc869 (config)#	**exit**
Step 9	Save configuration	JAC0356323Qc869#	**write memory**
Step 10	Display the saved configuration parameters	JAC0356323Qc802#	**show conf**

Note: The router is not preconfigured by SIEMENS Medical Solutions if the prompt shows „Router"!

9. Final Configuration – performed by SIEMENS Remote Services

The router hardware configuration is finished. The final configuration will be carried out by SIEMENS Remote Services. This service is free-of-charge. **DO NOT** start to configure the router by yourself**!**
In order to use the central service of remote final configuration, fill out the checklist which can be found either in the router box or in the internet at the following address:
http://www-td.med.siemens.de/router/checklist.doc

It is important that you do not undertake any additional configurations on your own since the configuration needs to comply with certain standards in order for the router to function properly.

The final configuration includes registering the medical systems by the remote diagnostic server at SIEMENS Remote Services.

10. Appendix

Appendix A) Defining ISDN Service Profile Identifiers

An ISDN service provider, usually a telephone company, can offer a variety of services. Many providers use service profile identifiers (SPIDs) to identify the device that is using the ISDN service, similar to the way that the telephone company uses a telephone number to identify your standard telephone service. If you use a service provider that requires SPIDs, the provider assigns your ISDN device one or more SPIDs when you first subscribe to the service. Providers use different numbering schemes, but a SPID is usually a seven-digit telephone number, plus some optional numbers. The provider also assigns your device one or two local directory numbers (LDNs), which function as the router telephone numbers. The LDN is the number that a remote router dials to make a call to the router.

Note: SPIDs have significance only at the local-access ISDN interface. The remote router is assigned a SPID when the ISDN BRI services are ordered for that router.

Appendix B) ISDN BRI Switch Types

ISDN BRI supports a variety of service provider switches. The following table lists, by geographic areas, the ISDN switch types supported by the Cisco 1600 series routers ISDN BRI interface. When configuring the router, use the **isdn switch-type** command followed by the corresponding code.

COUNTRY	SWITCH TYPE CODE
Australia	
Australian TS013 switches	**basic-ts013**
Europe	
Norway NET3 switches (phase 1)	**basic-nwnet3**
NET3 ISDN switches (Germany, UK and others)	**basic-net3**
French VN2 ISDN switches	**vn2**
French VN3 ISDN switches	**vn3**
Japan	
Japanese NTT ISDN switches	**ntt**
North America	
AT&T basic rate switches	**basic-5ess**
NT DMS-100 basic rate switches	**basic-dms100**
National ISDN-1 switches	**basic-ni1**
New Zealand	
New Zealand Net3 switches	**basic-nznet3**

Appendix C) Maximum Cable Lengths

Cable	Maximum Length
Ethernet	100 metres
ISDN S/T	10 metres
Telephone cable	152 metres